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21-1







Study, the best Improvement of Time.

A
FATHER'S FIRST LESSONS;
OR,
A DAY'S
INSTRUCTIVE EXCURSION;

CONTAINING
THE FIRST ELEMENTS OF USEFUL KNOWLEDGE.



Translated from the French of

L. F. JAUFFRET,

AUTHOR OF THE TRAVELS OF ROLANDO, &c.



Embellished with Five Engravings.



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INTRODUCTION.



WHEN a father has the happiness to preside over the early education of his children, he feels the necessity of placing in their hands, without delay, books which may be agreeable to their age, and which have been expressly composed for them. It is our opinion, that this one will not be without its utility. It will be read by children both with profit and delight; and will afford more than one parent an opportunity of making, in the company of his tender offspring, an excursion at once instructive

and amusing, similar to the one which Montval contrived, to draw the attention of his young boys to the divine objects of the creation. To children endowed with a certain portion of intellect, how many charms, and how many advantages, would result from such a day passed in the country! We are persuaded that, while it would excite the tenderest emotions of the heart, it would be for ever engraven on their memory; and it appears to us, that we have not formed an erroneous judgment, when we pronounce our opinion, that the author of this work, in giving it to the public, has acquired a new title to the gratitude of children, and even to that of parents.

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A

FATHER'S FIRST LESSONS.

THE MORNING.

The smile of Morning gleams along the hills,
And wakeful Labour calls her sons abroad :
They leave with cheerful looks their lowly vills,
And bid the fields resign their ripened load.

J. SCOTT.

AWAKE, my dear children. The day has not yet broken in upon us; but we have some distance to go before we shall reach the summit of the mountain to which I have promised to conduct you. Let us hasten, seeing that this is the day I have chosen to draw your early

B

attention to the great wonders of Nature. Never will any spectacle be better calculated to excite your admiration, your curiosity, and your gratitude to the SUPREME BEING.

Thus spoke the sage Montval to his two sons, Edward and Maximilian, who were soon ready to accompany him. Their accustomed prayers were not neglected; and they quitted their abode, provided with a basket, in which were contained provisions for their breakfast and dinner. They now took, with their amiable and virtuous father, the road leading to the Aurelian mountain, which commands the view of a plain of several leagues in extent, and from the summit of which there is a distant prospect of the sea.

THE FIRMAMENT.

“The heavens declare the glory of God, and the firmament sheweth forth his handy-work.”—DAVID.

MONTVAL gave his hand to each of his sons, and replied, as they proceeded, to all the questions their curiosity prompted them to make.

On which side does the sun rise? enquired one. Why is not the moon always at the full? demanded the other. Is the number of the stars known? Why are they of different sizes and dimensions? Why are they placed in the sky without any symmetry? Why are some of them more brilliant than others?

What difference is there between a planet and a star? What are those stars which dart through the sky, and disappear in falling? What is the Milky-way, which seems to divide the vault of heaven into two parts? Do the stars rise and set in the same way as the sun and moon? To all these questions, and to several others of a similar kind, Montval replied in terms adapted to the intelligence of the young boys. He raised their imagination, when he spoke to them of the immensity of the universe, and of the rich extent of the firmament, the boundaries of which are known to GOD alone. See, said he to them, see yourselves if any human work can approach such a degree of grandeur and mag-

nificence! What are all the monuments in which man prides himself, in the presence of this fine universe, the sole existence of which so loudly proclaims that of its **DIVINE AUTHOR**. The apparent confusion in which the stars seem to be dispersed in the sky, is a proof of admirable wisdom; for you will one day know, my dear children, that, if the stars were all of them of the same size, exhibiting the same degree of lustre, and were disposed in the firmament in the same way as we sometimes display them on stuffs symmetrically embroidered, our eyes would never be able to distinguish them from each other; and, consequently, the constellations would never have been ima-

gined, nor would any astronomical observation have been made. I have several things to say to you relative to the principal planets which embellish the firmament. I will teach you to know them, and will tell you, respecting each of them, all that may be within the reach of your intelligence. May you, in contemplating this magnificent spectacle, elevate your thoughts towards the powerful and good God who has vouchsafed to display it to your view !

THE EXISTENCE OF GOD

PROVED BY THE WONDERS OF NATURE.

———Almighty Being!
Cause and support of all things, can I view
These objects of my wonder; can I feel
These fine sensations, and not think of THEE?

THE children of Montval felt a lively emotion. The beauty of the spectacle which presented itself to their view drew all their attention, and impressed them with astonishment and gratitude.

Montval, as they walked along, drew out his watch to know whether the distance was such as would enable them to reach the summit of the mountain before sun-rise; and,

having done so, he directed the attention of his two sons to this admirable instrument by which time is measured: My young friends, (said he,) consider well this watch. If you should find, on a deserted spot, this master-piece of human invention, which so regularly marks the hours and the minutes, what would you say? You would say, without doubt, “It is to a watch-maker that we owe this astonishing work; it is impossible that this watch can have formed itself.”

In the same way, if you should, in passing over a plain, meet with a house elegantly built, and provided with rich and commodious apartments, you would say, “A skilful architect has constructed this edi-

fice, which the hand of man has embellished and furnished."

If you should, on an insulated spot, find a picture representing, in the most lively and most striking colours, either a beautiful landscape, a celebrated battle, or any other interesting subject, you would say, "This is the work of a painter: with this rich composition Chance has not any concern: the smallest part of this picture cannot have made itself."

Well, my children, what then will you say in directing your attention to the wonders of the universe? You will, without doubt, exclaim, "The heavens declare the glory of **GOD**, the **CREATOR**; and the firmament sheweth **His** omnipotence."

How much is he to be pitied who can view with coldness and insensibility these most ravishing wonders! The existence of GOD has been acknowledged by all nations. It is sufficient to cast a look towards the sky,—it is sufficient to consider the universe,—to be penetrated with this consolatory truth. But, seeing that this powerful GOD exists; seeing that the universe is the work of His hands, and is by His providence preserved, it evidently results that His paternal regards watch over us; that He is sensible of our respectful homages; that He is touched by our love; and that we should be guilty of the deepest ingratitude if we were to harden our hearts against Him.

THE DAWN.

— Up springs the Lark,
 Shrill-voiced and loud, the messenger of Morn;
 Ere yet the shadows fly, he, mounted sings
 Amid the dawning clouds, and from their haunts
 Calls up the tuneful nations. THOMSON.

WHILE this was passing, Montval and his two sons approached the summit of the Aurelian mountain. A vast horizon already displayed itself to their view; and Edward and Maximilian had no longer need to enquire on which side the day would break. A rising effulgence towards the East was the sure harbinger of the planet of light. The stars shone with a diminished lustre, and Night appeared to have thrown her veil

anew over the western horizon. By degrees, the circle which, on the opposite side, bestowed a fainter hue on the azure vault of heaven, ascended and spread. The objects, a glimpse of which could before scarcely be obtained, were now clearly developed. It was day, and the twilight yielded to the dawn.

On the birth of Aurora, the entire compass of the horizon is insensibly enlivened with the most beautiful red. The clouds every-where assume lively and variegated colours, the thickest of them being bordered with a fringe more brilliant than silver. The light vapours which float in the East are there converted into gold; and the green hue of the plants, softened by the dew-drops

which cover them, bestows on the latter the chastened lustre of pearls. But, however beautiful Nature may be at this moment, we are still less attentive to what she displays to us than to what she promises. By the successive growth of Aurora, we perceive that she announces to us something more perfect. She is a medium replete with a soft splendour ; and, in fortifying herself by degrees, she facilitates to our view the passage from darkness to the broad glare of day. Each moment adds somewhat to the one by which it was preceded. We advance from light to light ; we wish to see it in all its plenitude ; and that which is granted to us at the present merely supplies us with a taste before hand,

and makes us sigh after the splendid luminary whence its principle is derived. There is a decided time when he will appear in all his glory : that period is not remote, but it is still in expectance.

My dear children, (said Montval, addressing himself to his two sons,) we may consider Aurora more magnificent at present than it was at the very instant of the creation itself. There were then neither spectators, nor objects to be illumined ; but now, when the break of day dispels the dark shades of night, it displays to our view a soil embellished with the most beautiful verdure, and covered with the bounties of nature, destined for our use. It suddenly presents to us the,

spectacle of mountains crowned with leafy forests, having their declivities planted with the fruitful vine;—of plains covered with the golden harvest;—and of meadows, with the rivers by which they are watered. It drags from obscurity entire cities; the domes and spires of temples; the magnificent palaces of the great; and the habitations of the people dispersed over the plain.

SUNRISE.

—The Sun extends his cheering beam,
And all the landscape casts a golden gleam;
Clear is the sky, and calm and soft the air,
And through thin mist each object looks more fair.

J. SCOTT.

OH, my children! (exclaimed Montval,) if the succession of days and nights, without which we should be unable to measure the progress of time, had not any other advantage beside that of presenting to our view, each morning, the surprising spectacle which astonishes and enraptures us at this moment, would it not still be a favour which cannot be sufficiently prized? What can



Sun Rise.



be finer or more grand than the aspect of the East, at the moment when the sun rises with so much glory above the horizon? If men in general are not so strongly impressed by it as they ought to be, it is only because they are so much accustomed to this sight. If the sun were to rise but once in the year, and if, during the remainder of the time, the eye were to receive its light from the pale rays of the moon only, with what astonishment, with what admiration, would not men be seized, when, after so long a night, they should suddenly see the splendid planet of day emerging from the bosom of the East; rising above the horizon through an assemblage of purple clouds; speedily dissipating them by the

power of its rays; and pouring, both light and heat from above, on the dazzled earth! This spectacle would, without doubt, be marvellous; and man would vainly seek terms to convey the impression it would make on him. What a pity that its being so frequently renewed should weaken our gratitude to the great Disposer of these blessings!

There is at present but one torch in the vast extent of the firmament; and, in effacing all the others, it not only recompenses us for the loss of their light, by the superiority of its own, but bestows on nature a splendour and a glory which give it an entirely new aspect.

What then is this globe, which alone, the moment it displays itself,

causes so general a renovation? Is it simply a globe of fire? What is fire, and that light which it darts on every side? Are light and fire one and the same entity? Or are they two, which either proceed in company, or of which one continually impels the other? How can this globe act so powerfully, and at such great distances? In the course of more than six thousand years, during which it has warmed and illumined nature, why has it not lost the greater part of its substance, which it gives out unceasingly? Is it provided with a reservoir, by which its losses are supplied? or is there a circulation of fire, and of light, which continually brings back to the sun

what flows from it without interruption? The time will come, my children, when natural philosophy will furnish you with a reply to several of these questions; but who can ever flatter himself that he shall be able to attain a thorough knowledge of the works of GOD?

To give you, at present, a feeble notion of their immensity, I must inform you that the sun, which to our eyes appears so small, on account of its extreme distance, is, agreeably to the observations of astronomers, one thousand four hundred times larger than the earth. Now, the earth has a circumference, or circuit, of nine thousand leagues.

This visual deception, relative

to the size of the sun, is not the only one against which we have to guard. Our eyes deceive us also as to its motion; and on this head, although you are as yet too young to form a just idea of the system of the world, it is, nevertheless, right you should know, that it is the earth itself which turns daily, and not the sun which turns round the earth, as an error of sight might lead us to imagine. The sun does not change its station, but remains in the centre of the universe, to illumine whatever surrounds it.

By the help of telescopes, it has, however, been remarked, that the sun itself has a rotary or whirling motion. Spots have been discerned

on this very resplendent body ; and the discovery, that the sun does so turn, is owing to the periodical return of these spots. As it requires twenty-seven days for them to come back to the point whence they departed, it has been thence concluded, that the sun employs twenty-seven days to make a complete revolution on its axis.

It is estimated, that the sun is distant from us thirty-four millions, three hundred and fifty-seven thousand, four hundred and eighty leagues. This prodigious distance results from the wisdom of the CREATOR. If the earth had been nearer to this planet, the heat, which is already so powerful in the

Torrid Zone, would have been insupportable throughout the whole extent of our globe; and if, on the other hand, it had been more distant from the sun than it is, the seas would all of them have been frozen over, and the entire globe reduced to a steril and uninhabitable mass of ice.

THE EARTH.

Drest up with sun, and shade, and lawns, and streams,
A mansion fair and spacious for its guests,
And full replete with wonders. BARBAULD.

THE children of Montval were mute with admiration. Edward at length broke silence, and said to his father: Oh! how delighted I am that I came hither to admire so beautiful a spectacle. It will not be the last time that I shall repair before break of day to the summit of this mountain. Now that I know the way, I shall frequently return to enjoy the pleasure I at this moment feel. It would appear that the animals themselves partake

of this pleasure. Do you hear the birds in the environs, how they emulate each other in their song? They seem to salute the sun on its rising. The entire earth is wrapped in joy: the verdure of the trees is embellished by the refreshing coolness of the air; and, on the darting of the earliest rays of the planet of day, innumerable blossoms expand, and appear to vie with each other in the full and lively display of their variegated hues.

But, my father, you have said that the earth daily turns on its own axis. This I do not perfectly understand; and I also find it very difficult to conceive that the earth is round like a ball?—Be patient,

my child, and the time will come when you will be enabled to comprehend these things more readily. The earth is round, and has, as I have already informed you, a circumference, or compass, of nine thousand leagues. Its mountains and valleys, which appear to us so considerable, are nothing in comparison to its size : they can at most be compared to the inequalities which we see on the rind of an orange, and which do not prevent that fruit from having a round or globular form.

In considering this enormous mass, we are led by our imagination to place it on a solid basis : it, notwithstanding, floats in space, and rolls suspended in the firma-

ment with millions of bodies still heavier, finishing its course in the space of twelve months. This periodical rotation governs the seasons, and produces the year. Constantly rolling on its axis, it successively turns its sides towards the source of light, and by this means gives the day to our hemisphere, while the other hemisphere is enveloped in the darkness of night; but for this double movement, the one-half of the inhabitants of the earth would be devoured by the scorching rays of the planet of day; and the other half, frozen amid snow and mists, would languish in darkness.

To give you an idea, as well of the *diurnal* motion as of the *annual*

motion of the earth, I shall show you a sphere, and cause it to move in your presence. If you listen attentively to my explanations; if you watch, with an eye greedy of instruction, the different movements of the celestial bodies; you will form a notion, although but an imperfect one, of the mechanism of the universe. You will thus be more disposed to extend your knowledge of geography and cosmology; and, by degrees you will understand as much as those who profess to be best informed on these branches of science.

MOUNTAINS.

Rocks rich in gems, and mountains big with mines.

THOMSON.

LET us seat ourselves, my children, on this elevated rock, whence our view embraces an immense horizon; and, while the heat is yet supportable, let us hasten to study and admire all the objects by which we are surrounded.

We are on a high mountain. From this steep and shelving rock we have the advantage of surveying an entire province, and of perceiving in the distance a vast extent of sea. At the first glance we are

astonished that the earth should be, in several parts, studded, as it were, with mountains, some of which are constantly covered with ice and snow; but, on a nicer view, we soon discover that these numerous eminencies are a fresh proof of the wisdom of the CREATOR.

But for the lofty mountains with which its surface is covered, the earth would in reality not have been inhabitable. It is there that the eternal reservoirs of all the waters which give life to our plains are stationed. It is there that the vapours and clouds are collected, being drawn thither by the attraction of the mountains; and it is there that these

vapours are converted into water; it is thence that they descend in rivulets, which flow into the plains, to form lakes and rivers. The eminences, which on one side bound our view, supply us with a clear spring—with a salutary brook; but the Alps which rise between Italy and France furnish the currents of the Rhine, the Rhone, and the Po; and, although these mountains are themselves, for the greater part, condemned to an eternal sterility, they in reality convert these two great regions into delicious gardens. Were they, together with the Cavernes mountains, to be levelled with the plains,—the Tessin, the Adige, and the Po, would be

drained, and Lombardy left dry; the Rhone, the Rhine, and the Loire, would disappear; and the centre and north of France would become a hideous desert. All the parts of which the globe is composed mutually lend their aid to each other. The vapours which rise in the Adriatic, and on the side of Holland, alternately hover over Mount St. Gothard; they are there condensed, to fill its basins; and the waters which the sky has distilled on this huge mountain flow to irrigate Lombardy, Switzerland, France, and Holland. From the Torrid Zone, a warmth is diffused over the Temperate Zones by which they are fertilized; and, from the

Temperate Zones, a cool and refreshing air, which renders it inhabitable, is wafted over the Torrid Zone. All is connected: the whole earth is the work of one and the same Intelligence; and the good of man is the visible end of its formation.

MINERALS.

Through dark retreats pursue the winding ore,
Search Nature's depths, and view her boundless store.

DR. YALDEN.

THOSE elevated mountains, the utility of which, my dear children, I have just pointed out to you, would have remained almost constantly deserted;—it is, indeed, probable, that man would have neglected them entirely, had it not been for the rich minerals which the most barren of them often conceal in their bosom. These supply him with a new motive to frequent them, and to appreciate the valuable advantages they afford him.

The name of *minerals* is bestowed on the substances which are drawn from mines, that is, from excavations made in the bowels of the earth. Among these substances, the metals, which are of great utility to man, are to be particularly noticed. These are, *iron, copper, tin, lead, silver, and gold.*

Iron, which is the most necessary metal, is found in a greater or less abundance in all the regions of the earth. It was thought for a long time, that South America was deprived of it; but it was at length ascertained by the learned ULLOA, that it is found in Peru, as in every other country.

It abounds, however, more particularly in the northern parts of

the globe ; and it is there that it is most necessary to man. A soil possessing but a small portion of fertility, must be deeply ploughed. To guard against the rigours of the climate, solid edifices must be constructed ; for which purpose, stones are to be hewn, and, being drawn from the quarries, are to be cut into different forms ; trees are to be felled, and shaped in a thousand ways ; and, lastly, machines of every description are to be fabricated. How would all these tasks have been performed without the help of *iron* ? Thus has the providence of the CREATOR dealt it out with a lavish hand, and in the most astonishing profusion, in the colder climes. Sweden and Siberia pos-

sess inexhaustible mines of this metal, of which there are, indeed, entire mountains. It is not buried in the bowels of the earth, like the less useful metals; but Nature seems to present it to the hand of man. North America enjoys the same advantage. France, although situated in a milder climate, but destined to become the country of a laborious nation, has been gifted with the same riches, with which many parts of Great Britain also abound. Iron is separated from the earth with which its ore is blended by the help of fire; and it is likewise by its aid that this metal is wrought, in such a way as to be formed into vessels and implements of every description.

Copper, which is next in utility to

iron, also follows it with relation to its abundance. Rich veins of this metal are found in England, Sweden, and Transylvania; in the Ural mountains of Siberia, as far as Kamschatka; and in the blue mountains of North America. When copper is exposed to moisture, and to the action of the air, it is covered with the rust known by the name of *verdigrise*, an active poison, the fatal effects of which are well understood. When melted and purified, it has a red colour; but, being combined with zinc, it produces a yellow colour, and is then called *brass*. If it be united with tin, it yields what is called *bronze*.

Lead, which we employ with so much advantage, either in its metallic form, or in a thousand prepara-

tions indispensable to the useful arts, has rich veins in all the countries of Europe. It is almost invariably accompanied by a small portion of silver, as if to defray the expenses of extracting it from the mine.

Silver, with the value and use of which you are acquainted, is likewise pretty generally disseminated in the earth; but the mines of this metal are most common in the cold regions, while those of gold are most abundant in hot countries. Among the numerous silver mines of Europe, those of Norway are the most important; but the richest which have been explored are in America, in the centre of the Cordilleras, or chains, of the Andes mountains, which, on account of their great elevation, are

covered with a perpetual mist, or hoar-frost. There Nature has scattered this metal with a true profusion.

Gold is a native of the countries situated between the tropics, and is not elsewhere to be found, unless in very small quantities. In the southern part of China; in the islands of the South Sea, and Japanese territories; in the two peninsulas of India; in the scorching plains of Africa; and, lastly, in Mexico and Peru, the most abundant mines of this noble metal has been discovered. There are veins of gold dispersed in other countries, such as Hungary, and even in Siberia; but their slight importance sufficiently points out that they are in a manner strangers to the soil.

In the hot countries, between the tropics, the Author of nature has likewise stationed *diamonds*. It is invariably in the Torrid Zone—it is constantly on the very route which the sun follows—in the Indies, and in Brazil—that this *chef-d'œuvre* of the mineral kingdom is found. It is likewise between the tropics, that the most beautiful of the precious stones, such as the ruby, the sapphire, and the emerald, are discovered.

In those favoured countries the earth is in a manner decked with a rich girdle, or sash, of gold, set with precious stones, which embraces it throughout its greatest circumference.

Towards the north, in the fiftieth

degree, there is a similar girdle, or zone, but infinitely less valuable. It is composed of copper, silver, and lead, and occupies a breadth of about five degrees of latitude. Thence, the farther we advance in a northern direction, the more abundant does iron become.

But, beside metals, the earth contains various mineral substances, which are infinitely useful to man. *Sulphur*, for example, has supplied him with important remedies, and answers a variety of purposes in the arts. Like iron, it is found in every territory. There are countries, such as Sicily, where the veins of this mineral are five feet in thickness.

The fossil called *coal* is distri-

buted, in beds and enormous masses, in all the northern countries where man has need of a sure and abundant supply of fuel, which may serve as a substitute for the forests destroyed by conflagrations, or cleared for the calls of agriculture. England, the Netherlands, the centre of France even, possess inexhaustible riches of this nature; while in the southern regions but little coal is to be found. It would there be useless; and the author of nature has not done any thing in vain. *Sea-salt*, so essential to man, whether to render his aliments more agreeable and more wholesome, or to preserve them from putrefaction, is abundantly distributed throughout

the whole surface of the globe. The borders of the sea furnish it in unlimited proportions; and in the interior of continents there are salt springs and lakes which can never be exhausted.

VEGETABLES.

Your contemplation further yet pursue;
The wondrous world of vegetables view!
See various trees their various fruits produce,
Some for delightful taste, and some for use.
See sprouting plants enrich the plain and wood,
For physic some, and some designed for food,
See fragrant flowers, with different colours dyed,
Or smiling meads unfold their gaudy pride,

BLACKMORE.

NEAR the spot where Montval was seated with his children, grew several wild pines, on the branches of which the feathery songsters warbled melodiously. At a little distance the rocks formed a grotto, through which ran a spring of clear water, and which was overhung with ivy, with the scolopendra, and

other plants. This grotto, said Montval to his two sons, will serve us as a retreat when the heat of the day will be no longer supportable : let us now still breathe the fresh air of the morning, and take a survey of the immense horizon by which we are surrounded. Let us examine the trees and plants which cover the earth at a distance, and study the animals with which it is stored. We shall perceive but a small part of the wonders of nature ; but the little which the eye will be able to embrace will be sufficient to fill us with admiration and gratitude.

The first thing which ought to strike us, in considering *vegetables* (under the name of *vegetables* are

comprehended trees, herbs, and plants of every description), is the green colour which embellishes the whole of them.* This colour has such an agreement with the structure of the eye, that it causes it to dilate instead of straining it, and, instead of exhausting it, affords it nourishment and support.

Do not think, however, my children, that the green of trees and plants is throughout the same. Not any one plant is coloured like another. If you view and compare them, you will find that there is a sensible difference. This surprising variety, which art cannot imitate, is likewise diversified in each plant, which is, in its origin, in its pro-

gress, and in its maturity, of a different kind of green.

The diversity which prevails in the green colour of the leaves, is not less remarkable in the symmetrical form of these leaves, in which we see so prodigious a variety of indents, notches, ornaments, and beauties, that the imagination is at once astonished and bewildered.

Hereafter, when you shall study *botany*, that is, the science which teaches the knowledge of vegetables, you will become acquainted with the terms which botanists employ, to express the varieties of the leaves. Some they name *oval*, others *lanceolated*: these are *palmated*; those *filiform*, &c. Some are *smooth*; others *indented*, *denticulated*, *villous*

or rough, simple, compounded, re-compounded, &c.?

The same variety which exists in the leaves, in the stems, and in the figure of vegetables, is likewise to be found in the flowers with which they are decked. It is almost impossible to credit how far the attention of the Author of Nature has been carried in bestowing a diversity on their form and beauty. The multitude of flowers is prodigious: they grow on the tops of lofty trees, and on the slowly creeping plants. They embellish both mountains and valleys: the meadows are enamelled with them; and they are gathered at the wood side, and even in the desert. The earth is a garden which is entirely covered with them; and,

to the end that man should not be deprived of this delicious sight, when he is confined within the narrow limits of his dwelling, it seems to be their wish to render it agreeable to him, by forming an assemblage in his parterre; where they afford him a still greater pleasure than when scattered in the fields.

Flowers differ from each other, not only in their form and colours, but also in the season when they blossom: they display their charms successively, and in a regular order. The primrose, the violet, the hyacinth, and the narcissus, may be said to give the signal to the flowers of summer. Shortly after, the lily, the lilach, the iris, the tulip, the jonquil, and the ranunculus, gladden

us with their bloom. Somewhat later, the rose, gillyflower, the pink, and the poppy, embellish our parterres; and, lastly, the balsam, the tuberose, the amaranthus, the India pink, and a variety of other flowers, unite to form the autumnal garland.

If from flowers we proceed to fruits, my dear children, what a new source of wonders and of benefits is laid open to us.

It is to be remarked, that there are fruits for each season; and what is still more to be admired than their abundance, although that may be deemed a prodigy, is the wise distribution which has been made of these productions, according to the necessities both of seasons and of climates. During the winter, when

the earth reposes, and ceases to produce, to recover fresh juices, we enjoy an ample production both of fruits and firm pulses, capable of lasting a long time. Among these may be particularized walnuts, almonds, lentils, French beans, chestnuts, &c.

During the summer, the earth constantly varies her bounties; and, in proportion as the sun acts more powerfully on us, she seems attentive to bestow on us refreshing fruits, such as the melon, the peach, the pear, the plum, and the cherry.

The same agreement which subsists between the fruits and the seasons, is also found between the former and the climates which favour their production. In pro-

portion as we advance towards the countries the inhabitants of which see the sun pass and repass over their head, we find fruits, not only juicy as the melon, but cool, acid, and filled with a water calculated to allay the heat of the blood, which is there in a highly rarefied state. Such are the lemon, the citron, the orange, and the pine-apple.

You see, my children, the truly paternal attentions of the Author of Nature; but this is not all. In creating fruits for the nourishment of man, it was His wish that the latter should know, in several ways, the period of their maturity.

You have without doubt remarked that all unripe fruits are, in their earliest state, of the colour of the

foliage. Gooseberries, cherries, and fruits in general, do not change this colour until they begin to ripen. As soon as their maturity approaches, Providence warns us of it by bestowing on them a colour which contrasts strongly with the verdure of the trees. She paints them with a gentle gradation of colours, either red, as the strawberry; of a fine violet, as a particular kind of plum; of a yellow, more or less deep, as the lemon and the orange; of a beautiful azure, as a particular species of fig; or of a rose-colour on a flesh-coloured ground, as the peach.

Beside this warning bestowed on the sight, Providence frequently gives notice to the sense of smelling, by the perfume of fruits:—it is by

the scent that we judge of the ripeness of the melon, and of the apple. Another equally important notice is afforded to the touch :—a ripe fruit becomes soft ; and thus our fingers are apprised of its maturity, in the same way as, in receiving its colour, the information is bestowed on the eyes. Finally, the last intimation is given to the taste, which in this department is the supreme arbiter :—fruits, in proportion as they ripen, acquire a delicious flavour, which flatters the taste the most difficult to be pleased ; and this luscious flavour succeeds to the tartness and acidity they possessed before.

Another important remark is to be made, my children, in considering herbs, shrubs, and trees. These

three kinds of vegetables are so distinct, notwithstanding the analogy of their nature, that they were for a long time separated by botanists themselves in their systems. The stem of herbs neither resembles that of shrubs, nor that of trees. The former is herbaceous, soft, pliant, and flexible: the two others are woody, hard, and compact. If the plants which we tread beneath our feet had, like trees, been provided with a woody stem, we should not have been able to walk on the turf, and should have been deprived of an access to the woods and meadows. If, on the other hand, the trunks of trees had not been in a certain measure conformable to the proportions of the human size, and

if, instead of rising to a certain height before the bifurcation of the boughs is affected, or, in other words, before they spread out into shoots, they had produced, at the distance of one or two feet from the earth, those enormous branches which form such beautiful domes of verdure over our heads, we should have been arrested in our progress at every step, and man would not have been able to walk beneath the shade of trees. The woods and groves would have presented to him inaccessible barriers; instead of which, in the state of things, as they have been ordained, he may walk every-where without obstacle or impediment. The most capa-

cious forests are to him so many temples of verdure,—the trunks of the trees forming the columns, and the branches, clad with their foliage, constituting the vaulted roofs.

REPRODUCTION OF VEGETABLES.

— Thus Nature did ordain,
For trees, and shrubs, and all the sylvan reign.

DRYDEN'S VIRGIL.

HEREAFTER, my children, you will know what the characteristics are which separate minerals from vegetables, and vegetables from animals. The former are rude and inorganic bodies, which are not endowed with sensibility, and which simply grow by aggregation. Vegetables and animals, on the contrary, have organs; but vegetables live and feel, without having the faculty of changing their place; while animals live,

feel, and move from one place to another.

Vegetables have their peculiar mode of living, and of perpetuating their kind. A grain which is to produce a plant may be compared to an egg from which a bird is to be hatched. This grain varies according to the plant which produces it; but, in examining attentively grains of every kind, we shall discover the great precautions taken by Providence to preserve and propagate them. In the first place, the seeds of all plants have different sheaths, or envelopes, which afford them a security until they are put into the earth. They are turned over, measured, and heaped together, and all without danger, be-

cause they are thus enveloped and secured. Some are in the heart of fruits, as the kernels of apples and pears; and others in shells or pods, as pease, beans, lentils, and the seeds of poppies. There are some which, beside the pulp of the fruit, have likewise large shells, of a ligneous substance, more or less hard, as the kernels of apricots, peaches, plums, cherries, and others. Several, beside their wooden shell, have also an exterior bitter shell, as we see in walnuts; or a sheath furnished with points, to preserve the grains from every injury until their maturity, as chesnuts.

But beside these envelopes, which are in a manner extraneous, each grain has likewise its husk, or outer

covering; and its epidermis, or skin, in which are enclosed the *pulp* and the *germe*.

It has no doubt happened to you sometimes, my dear children, to open in the middle a pea, a bean, or a melon seed. The two portions which separate from each other are what are called the two *lobes* of the grain. These *lobes* are nothing more than an assemblage of particles of *farina* or meal, which, being blended with the nutritive juice or sap of the earth, form a pap or milk adapted to the nourishment of the *germe*.

Above the lobes is the *germe*, fixed and sunk in like a small nail, and having its head somewhat elongated and pointed. It is composed of a

radicle, and of a stem. The *radicle*, or tail of the germe, is the root of the future plant. It adheres to the lobes by two bands, or rather by two forked tubes, the branches of which are distributed in the lobes, where they are destined to seek the juices necessary to the young plant.

The *stem*, or body of the plant, is folded up in two leaves, which entirely cover it as if in a box, or between two shells.

These two leaves are the first to open, and to liberate themselves both from the grain and from the earth. It is their office to prepare the way for the stem, the extreme delicacy of which they preserve from the injuries which might otherwise befall it: it is besides probable that they

may answer some other useful purpose. As these two leaves are very different from the true foliage, and as they are the earliest to quit the grain, to secure the infancy of the plant, they are named *seminal leaves*.

After the radicle has been nourished by the juices it derives from the lobes, and has nearly reached the bottom of the grain, and the envelope or outer case of the lobes, it there finds a small opening, which may be perceived, by the help of a microscope, as well in the shells of walnuts, &c. as in the husk of grain. By this opening the radicle passes, and puts forth into the earth several filaments, which are named *capillaries*, and which may be considered as so many tubes to conduct the sap into

the body of the root, whence it forces itself into the stem, so as to enable it to ascend into the air. If the stem meets with a turfy and obdurate soil, which it is not able to pierce, it turns aside; and sometimes perishes from an inability to force its way. If, on the contrary, it has to encounter a light and soft soil, it makes its progress without difficulty. The lobes, after having exhausted themselves in supplying the wants of the young plant, perish and decay. It is the same with the seminal leaves: when their service is over, they wither. The young plant, drawing from the earth, by its *capillaries*, and by its root, juices still stronger and more abundant than those with which it was, in

the first instance, supplied by the seed or grain, acquires strength by degrees, and begins to display the different parts which were before rolled up and enveloped in each other.

You should observe, however, my dear children, that the reproduction of vegetables is not accomplished by seeds alone. We see every day, at the foot of trees, young shoots which proceed from the roots; and our forests are not perpetuated otherwise than by the roots of the large trunks, which are left in the earth, to the end that they may throw off *suckers*. After a certain time, they may be separated from the trunk which has given them birth: this is what is called *to propa-*

gate by shoots. Sometimes plants, as the strawberry and violet, furnish branches which creep along the surface of the earth, to take root at a distance: branches of this description are named *off-setts* or *runners*.

ANIMALS.

One portion of informing fire was given
To brutes, the inferior family of Heaven.

DRYDEN.

WHILE Montval explained to his young children several of the phenomena of vegetation, and strove to stimulate their curiosity by displaying to them a small portion only of these wonders, reserving until another time more ample illustrations, the attention of Edward and Maximilian was suddenly attracted by the sight of a shepherd and his flock descending from the summit of the mountain, and taking the direction of the valley. The two

brothers wistfully eyed the sheep as they browsed in passing along, and noticed the shepherd's dogs which kept a watchful guard over the flock.

Montval now wished to shift the conversation to the animals themselves, which at that moment drew all the attention of his sons. My children, (said he to them,) you view this flock with pleasure. The animals which compose it, and which you observe to graze so tranquilly in their passage along the declivity of the mountain, form a part of what are named *domestic animals*. Animals of this description are apparently weaker than lions, tigers, and leopards; but are in reality of a more robust constitution, seeing that

they extend their abode into all regions, whatever may be the intenseness of the heat or of the cold; while the independent and less useful species inhabit particular portions only of the globe, and those very limited.

Each animal is attached to its primitive abode by the aptitude of the climate, and the quality of the nourishment it affords. The one whose stomach digests a greater variety of aliments, or which is satisfied with a simple and coarse food, supports on that very account a greater variety of climates. But how fortunate it is for us that the animals which are destined to be most useful to us, are likewise those which have been qualified by Pro-

vidence to inhabit all countries. I see the feeble ewe extend her dwelling from the Torrid to the Frozen Zone, while the rhinoceros and the tiger scarcely occupy a few degrees, beyond the limits of which they have never been able to pass. I see the hare and the rabbit brave the gelid climates of the north, while the monstrous hippopotamus would perish if he were to quit the heart of Africa. Lastly, I see the good friend, the companion of man—the dog—inhabit with him all countries. To him the Patagonian and the European alike confide the safety of their folds; while the ape is confined to a few regions, and has not an abode more extensive than that of the ermine.

Edward and Maximilian lent an attentive ear to the observations of their father, while each strove to anticipate the other in asking a thousand questions relative to the different kinds of animals which inhabit the earth and the seas. Are these animals, (said they,) still more numerous than plants? And are they all known?

My children, (replied Montval,) although a very considerable number of them are known to learned naturalists, it is to be presumed that thousands of species are still unknown to them. Not to be bewildered in a study so vast as that of animals, it has been found necessary to begin by separating them into different classes. A first class has

been formed of those which have paps or teats ; and these are styled *mammalious*. Animals of this kind are more generally known by the name of *viviparous quadrupeds*, that is, *four-footed animals*, which bring forth their young alive. With respect to those animals which have four feet, and which produce eggs, such as tortoises and lizards, they are named *oviparous quadrupeds*, and are classed with the reptiles.

QUADRUPEDS.

Who taught the nations of the field and wood
To shun their poison and to chuse their food? POPE.

THERE is a great difference in Quadrupeds. Man has rendered some of them familiar and domestic; but there are others which have constantly remained wild. Some are of a gigantic bulk, as the elephant, the camel, and the hippopotamus; others are of a very minute size, as the mouse, and the *pumilio*, or dwarf-mouse. Some of them subsist entirely on the herb of the field, as the sheep, the ox, and the horse; others

derive their subsistence from flesh, as the tiger, the panther, and many others. There are some which have their feet hoofed, that is, covered with a firm horny substance, as the horse, the ass, and the zebra; others which have a cloven foot, as the goat, the sheep, and the ox; and others, again, which have the feet formed like hands, as apes, and which are on that account called *quadrumanes*. Naturalists have studied all these characteristics, and have formed different orders in the class of quadrupeds. When you are a few years older, you will find much entertainment in studying this fine department of natural history; you will consult the authors by whom it has been treated, and you will read with plea-

sure the beautiful descriptions which Goldsmith and Buffon, the historians of nature, have given of the horse, the dog, the camel, and even of the ass, which has its merit as an animal. When you visit the capital, you will have an opportunity of seeing many living animals, not natives of Europe, brought from various parts of the globe; and in the different museums you will find others which have been stuffed and preserved. You will there more especially, be supplied with all the means, and all the facilities, necessary to the prosecutions of this very charming study, in which you will without doubt make a suitable progress.

How many things, my dear chil-

dren, might I not say to you respecting those animals whom the power of man has succeeded in taming, and who gladly obey him, as if he were their sovereign! Endowed with a preternatural instinct, and with a sort of intelligence, the dog has become to him a faithful guardian, whom nothing can seduce; —a warm defender, whose courage is not to be appalled by any difficulties: attentive to the will of his master, he anticipates his orders; and, while he is grateful for the bounties bestowed on him, does not feel any animosity when punished, but appears to be born for society. Of all animals he is, after man, the one whose organization is best adapted to support the changes of

climates: he is consequently the one whose dwelling is most extended over the globe. He is likewise the one whose faculties and habits have, as well as the form and vigour of his body, been most varied by the influence of climate, nourishment, and instruction. The varieties of the dog are very numerous. The mastiff and bull-dog guard our houses during the night; and the shepherd's dog is alike skilful in waging war against the wolf, and in disciplining the flock. Among sporting dogs, the terrier has the legs extremely short, and is thus enabled to creep among the brambles and bushes, and to penetrate into the burrows. The greyhound has a sharp head and a slender shape, to pierce the

air with facility. The beagle stops and crouches as soon as he sees the game, to warn his master. There are several kinds of beagles, the names of which vary with their functions; but they are all equally eager and faithful in the performance of the tasks allotted to them.

BIRDS.

Innumerable songsters, in the freshening shade
 Of new-sprung leaves, their modulations mix
 Mellifluous.

THOMSON.

MONTVAL would probably have continued to speak of the services rendered to us by quadrupeds, if a Bird, which happened to perch on the bough of a neighbouring tree, and which strained its little throat in pouring forth its melodious warblings, had not changed the subject of conversation, and drawn the attention of the party to the second class of animals, which have not any other affinity with those of the

first class, beside that of having, like them, the blood red and warm.

Birds, said Montval, addressing himself to his two sons, although very different from each other, have this common property, that they are all *oviparous*, that is, they proceed from an egg, which the female lays, and deposits in a nest. To give life to the young bird, she places herself on this egg, and broods over it for a certain number of days. In the process of time the heat animates the young bird, which gradually increases in bulk, and at length acquires sufficient strength to break the shell which kept it in durance. In Egypt the process of nature is imitated; and a great number of chickens are there artificially hatch-

ed, by exposing the eggs to the heat of an oven, the warmth of which does not exceed a certain temperature.

If quadrupeds differ so much from each other as to compose different orders, and those very distinct, birds do not vary less. Thus, to be enabled to recognise them, it has been found necessary to divide them. A separate family, or order, has been made of those which subsist on prey, and which on that account are provided with formidable claws, and with a pointed and sharp beak, which cuts and lacerates the flesh with the utmost facility. Eagles, vultures, falcons, and hawks, belong to this order. Birds of the crane kind, which inhabit marshes and swampy grounds, and which are provided

with long feet and a long beak, to seize their nourishment in the mud or ooze, are comprehended under the name of *grallæ*;—those which are webfooted, and swim on the water, such as ducks, swans, &c., by that of *anseræ*, or *palmipedes*;—by that of *gallinæ*, or *gallina-ceous*, those which belong to the family of the cock and hen, as pheasants, partridges, pigeons, and quails;—and by that of *passeræ*, all those which have a resemblance to the chaffinch, the sparrow, and the nightingale. You will hereafter acquire a thorough knowledge of all the subdivisions which have been made of this class of animals, and you will comprehend their importance and utility.

A great many more things I might

point out to your notice in the study of birds! Their bodies are not large and clumsy, nor of equal thickness in every part, but perfectly well disposed for flight; being small in front, and augmented by degrees, until it has acquired its just symmetry. It is thus extremely well adapted to skim the air, and to make its way through that element. There is an equal degree of art in the formation of the feathers with which birds are clad, and which bestow on them so great a legerity in flight. That they may be still lighter, they are hollow within, but are so well interwoven exteriorly, that they form a firm and solid contexture, which contributes greatly to their strength. Nothing can be more admirable than the mechanism

and lightness of the wings: nor can there likewise be any thing more wonderful than the tail, which serves them as a rudder to direct their course in the air, and to enable them to turn at pleasure.

REPTILES.

————— To sunny waters some,
By fatal instinct, fly.

* * * * *

————— Through the greenwood glade
Some love to stray. THOMSON.

NATURE is so vast, my dear children, that scientific men are obliged to study a part only, if they wish to understand it thoroughly. Thus, one applies himself to the knowledge of plants, and is called a *botanist*; another studies birds, and is termed an *ornithologist*; another studies insects, and is named an *entomologist*; and again another embraces the study of minerals, and is called a *mineralogist*. Each department is immense, and requires such numerous observations, that the life of one man will scarcely suffice to make him master of any one of them.

I have already spoken to you of two classes of animals : let me now proceed to a third, with which it is necessary you should be acquainted.

I will first speak of Reptiles, which are divided into four distinct families : that of serpents ; that of lizards ; that of tortoises ; and that of the *batrachians*, which comprehend toads and frogs. Each of these families are very numerous. The first, that of serpents, includes several kinds, the venom of which is very dangerous ; but, fortunately for us, the most formidable serpents are exiled, as it were, to very distant countries. The greater part inhabit the deserts of Africa, of Asia, and of America. In the desert of *Sahara*, the *divine*, is found a monstrous serpent, which

resembles at a distance the trunk of an enormous tree felled to the ground. In America is found the *rattle-snake*, the venom of which occasions death in a few minutes. The different kinds of *tortoises* are very valuable, because they supply us with a wholesome food and efficacious remedies. There are land tortoises and sea tortoises, the latter being also named *turtles*. Some of these are of so considerable a bulk that several men are required to turn them on their backs when they are found on the river's side. In the various sorts of lizards is found the dragon, a very innocent animal, which is a species of flying lizard, the head of which is covered by a kind of casque, or armour.

FISHES.

Of sea-born kinds, ten thousand thousand tribes,
Find endless range for pasture and for sport.

MALLET.

WE will now take a momentary survey of the sea which we perceive in the distance. If we were near to its border, we should see several fishing-boats along the coast, and might observe the movements of the fishermen, as they draw out of the water their nets, filled with Fish. Would you believe it possible, my children, that this vast mass of salt-water should be the abode of an infinite number of animals, of all sizes, of all forms, and of every

description? Providence has formed it as a distinct world, in which innumerable fishes have their existence, and insure infinite benefits to man. This new class of animals is the ordinary food of several nations. The fishery is a source of riches more inexhaustible than the mines of Peru. These are drained by degrees of the valuable stores they contain; but the great bank of Newfoundland, on which the cod-fishery is carried on, yields annually, and will constantly yield, without abatement, an immense revenue. Several of the northern nations, where a sudden and early return of the frost occasionally prevents the corn from ripening, find a never-failing resource in the legions

of fishes which swarm on their coasts. They preserve them for a whole year by drying them. They sometimes bruize and convert them into a kind of bread, which becomes a substitute for the crops that have perished through the rigour of the season. Beneath the frigid zones the Greenlander employs the bones of fishes, instead of needles, to sew together the bear-skins of which he makes his garments, using the dried intestines and sinews in the place of thread. The northern nations find another great advantage in the fish with which their coasts abound. During the long and dreary nights of winter, the fluid part of the fat of these animals affords them light; and the other part, which is of the consistence

of our butter, becomes its substitute, and is employed to season their dishes.

Remark, my children, that the body of fishes, whether inhabiting the sea or fresh water, could not have been better formed for an abode in the aqueous element. This body is covered with scales, which serve it as a coat of mail, and prevent it from being injured by the rocks. But, if this coat of mail had been of an entire piece, the fish would not have been able to move. The scales being small, and placed over each other in the manner in which tiles are disposed, allow it, on the contrary, to writhe and curl itself at pleasure. Beside this, a slimy exudation, which transpires incessantly, distributing itself

over the scales, renders them slippery; thus favouring an escape from the hands of the fisherman, and preventing the scales themselves from imbibing water. The fins of the fish answer the purpose of oars; and its tail, by alternate impulsions from the right to the left, and from the left to the right, causes it to advance in a right line. It ascends, descends, and maintains itself in the water at any given depth, by the means of a small bladder filled with air, placed within its body. If it wishes to rise to the surface, it dilates and extends this bladder, inflating it with wind. If, on the other hand, it wishes to descend, it compresses it, and descends immediately, finding its way to the bottom with the same facility.

INSECTS.



Poor insect! what a little day
Of sunny bliss is thine!
And yet thou spread'st thy light wings gay,
And bidd'st them, spreading, shine.

MRS. ROBINSON.



WHILE Montval spoke of the innumerable tribes of fishes which inhabit seas, rivers, and ponds, the attention of his children was called aside by other animated beings. Butterflies fluttered in the air, and alighted occasionally on the neighbouring flowers. Beetles, of a golden hue, displayed all their finery, as they crept along the grass; and flies, decked out in a variety of gaudy

colours, buzzed on the edges of the brook. Montval stopped for a few moments, as if to examine these insects more particularly; and then addressed himself to his two sons: My children, (said he,) the smallness of these animals appears, at the first view, to authorize the contempt in which they are held; but this very minuteness is an additional reason why we should admire the art and mechanism of their structure, which combines so many vessels, fluids, and movements, in a point which is often imperceptible. Common prejudice considers them as the effect of chance, or as the refuse of nature; but discerning eyes perceive in them a wisdom which, far from having neglected them, has

taken a particular care to clothe them, to arm them, and to provide them with all the instruments necessary to their condition.

Providence has clad them, and with partiality even, by lavishing on their garments, their wings, and their head, ornaments of the most resplendent colours,—azure, green, red, gold, and silver, diamonds even, together with fringes, tufts, and plumes. It is simply necessary to see a fly, a *cantharid*, or Spanish fly, a butterfly, or a simple caterpillar, to be struck with their magnificence.

The same wisdom which has been displayed in their various adjustments, has armed them *cap-à-piè*, from head to foot, and has put

them in a condition to wage war, to attack, and to defend themselves. If they do not always succeed in catching that for which they lie in wait, or in avoiding that which is hurtful to them, they are notwithstanding provided with what is best calculated to ensure them success. The greater part of them have either strong teeth or powerful claws. The scaly armour with which they are covered, defends every part of the body. The most delicate are provided exteriorly with a thick down, to break the force of the shocks they may receive, and to protect them from every sudden injury. Almost the whole of them avoid impending danger by the quickness of their flight; some by the aid of their

wings; others by the help of a thread, which they throw out; and by which they suspend themselves in their precipitate descent from the foliage to the earth, thus placing themselves beyond the reach of the pursuing enemy; and others, again, by the spring of their hind feet, the elastic force of which carries them to a considerable distance, and secures them from peril. Lastly, where strength is wanting, shifts and stratagems are employed in its stead; and this continual warfare which we observe between animals, supplies several of them with their ordinary food, at the same time that a sufficient number is preserved to perpetuate all the kinds.

How many wonderful things you

will hereafter learn, my dear children, in studying the natural history of Insects! almost the whole of these animals are subject, during their existence, to several extraordinary metamorphoses or changes. Those butterflies which hover over the flowers were, in the first instance, caterpillars. Those chaffers which, in the spring, fly and hum amid the trees, were originally worms, and afterwards *chrysalides*, or *aurelias*. The small white maggots, the sight of which disgusts you in putrefied meat, on dunghills, and in water, will hereafter become flies, of a greater or less brilliancy, and will flutter in the air.

You will, without doubt, enquire of me, what is the utility of these

insects. To this, I set out by replying, that they are the food of birds. Banish caterpillars, and you deprive the choristers of the groves of their existence. Accordingly, the young of the feathered tribes do not leave their eggs until the caterpillars are on the ground; and the latter disappear, when the former, having acquired strength, either have need of, or can be satisfied with, another food. Before the month of April, there are neither caterpillars nor broods; and, by the month of August, both disappear. The earth then is covered with grain and other productions of every description.

But insects are useful in another way. They consume putrid sub-

stances, to the end that the theatre of nature may be cleansed of every unwholesome exhalation and pernicious smell.

The number of insects being immense, in order to class them, it has been deemed necessary to separate them into several families, or orders. The family of butterflies alone comprises upwards of three hundred kinds. The caterpillars are all, like silk-worms, composed of several rings, which, by either approaching towards, or withdrawing themselves from, each other, carry the body wherever it has need to go.

THE RURAL REPAST.

— A perpetual feast of nectared sweets,
Where no crude surfeit reigns.—MILTON.

It was noon : the sun, having reached the middle of his course, shone with all his splendour. Come, my children, said Montval to Edward and Maximilian, follow me into the grotto which lies in the vicinity : we shall there find a cool and refreshing shade. Seated on the bank of the virulet which flows from the mountain, we will take our simple rural repast on the grass, and we may afterwards amuse ourselves by conversing on a variety of



A Rural Repast.

useful subjects, as the sages of Greece were accustomed to do at the end of their meals. This proposition was highly pleasing to the young boys, who did not require any further entreaties to repair to the interior of the grotto. They there spread on the turf the plain collation they had brought from the house, and placed a bottle of wine in the brook to cool. The father and the children ate with a good appetite, and found this little frugal dinner so delicious, that they fully resolved to renew it occasionally.

After they had dined, the children were anxious to know to what new subject Montval was about to draw their attention. Father, (said Edward,) it appears to me that we have

reviewed all that is comprehended in nature, from the stars of the firmament, to the fishes which lie beneath the surface of the ocean, and to the minerals buried in the bosom of the earth. We have admired quadrupeds, whether domestic or wild; birds of prey, those which frequent the banks of rivers, and those which warble in the groves. We have spoken of reptiles, and of the innumerable insects which undergo such singular metamorphoses. What have we still left to admire?


My children, (replied Montval,) the works of God are so extensive and so marvellous, that we might live entire ages without knowing the whole of them, and without ex-

hausting the admiration which the little we know of them excites within us. The history of the caterpillar of the willow alone occupied the whole life of a naturalist, named Lyonnet; and who knows whether it would be possible to add to the researches he made into the organization and habitudes of that insect? Nature is immense; but the years of man are limited. Happy, at the least, are those who, from time to time, devote a portion of their leisure to the most noble and most interesting of all studies!


Do you wish to know what, at present, remains to engage our attention, in this our rapid review of the wonders of the universe? It remains for us to take a sketch of

man, that is, of ourselves. The ancients entitled man an epitome of the world. He is, in reality, an abridgment of all the wonders which the entire world presents to us. To speak in an appropriate manner on this subject, I shall introduce a certain degree of order into what I have to say. The excellence of man would be forthwith demonstrated, if I were to begin by speaking of his reason. Reason is without doubt his finest attribute; but the structure of his body presents a series of wonders, on which we will, in the first place, bestow our attention.

The WONDERS of the HUMAN BODY.



“I will praise thee, for I am fearfully and wonderfully made.”—Ps. cxxxix. 14.



WHEN you consider the strongest and most robust animals, and compare them with Man, do you not find in the latter a character which distinguishes him at the first glance, and gives him a decided superiority over all other animals? This pre-eminence announces itself instantly by the dignity of his head, and by the advantage which the upright position of his body affords him.

There is not in nature any thing so fine as the countenance of man,

The titles of his power—the claim of his ascendancy—do not anywhere appear with so great a lustre, although they are to be found in every part of his body with a like reality. The head, or rather the entire man, derives a powerful advantage from the posture of his body, in the exercise of his sway over the rest of the creation. All animals bend toward the earth on which they creep. Man alone walks with his head erect, and by this attitude preserves an entire freedom of action and command.

The movements of animals are, in each species, confined to a very small number, while those of man are, as well as his actions, without number, because it is requisite that

his prudence and his operations should have an unlimited extent.

But it is not the noble position of his body alone, which affords man the liberty of governing and varying his actions at will; it is also the proportion of his stature to whatever surrounds him. Had his size and proportions been less than they are, he could neither have consumed the productions of his lands, nor could he have cultivated them. With a gigantic bulk he would have found himself in the midst of scarcity, and the earth would not have supplied his wants.

Far from envying the animals who are fleeter of foot than himself, he either trains them to run for his service, or has recourse to the

agency of the winds to transport himself to every part of the globe. He does not wish to have broader shoulders, to be enabled to carry heavier burdens; but yields this advantage to his servants, such as the horse, the ox, the camel, and the elephant. He does not complain because he has not been provided with claws, as the lion,—nor tusks, as the wild boar. It well becomes the king of nature to be disarmed; but, if he has need of defence, animals come to his aid; wood and stone form ramparts to oppose his enemies; and, saltpetre, sulphur, fire, and iron, conspire with all nature to secure him from injuries.

The organization of man is a most interesting study, to which you

will, without doubt, apply yourselves hereafter, and you will then be astonished to find, in the construction of the eye, of the ear, and of the other organs, innumerable wonders, which are, at this time, beyond the reach of your capacity, It will be sufficient for the present to say a few words relative to their external structure.

THE SIGHT.

He with a lofty look did man endue,
And bade him heav'n's transcendent beauties view.

* * * * *

The beams of light had been in vain display'd,
Had not the eye been fit for vision made:
In vain the Author had the eye prepared
With so much skill, had not the light appeared.

BLACKMORE.

COME, my children, regard, I beseech you, on the convex surface of this decanter, a lively representation of the prospect by which we are surrounded. The sky, the trees, and an immense horizon, — in short, every object, is painted in small proportions, and in a very limited space. If you view it attentively, you will see in this mi-

niature-picture, the slightest movement of the leaves. How are we to account for this phenomenon? It is because the glass of the decanter is protuberant, or, to employ a more familiar expression, bulges out: if it were flat, there would cease to be any picture, or at least the picture would merely render the image of the nearest object. It is for this reason, that our eyes have a round or globular form. Thanks to this form, the universe is painted in a mirror of the diameter of half an inch; and this admirable organ enables us to perceive, at one and the same time, the insect which crawls at our feet, and the star which shines at an immeasurable distance in the heavens.

The place which our eyes occupy is the most advantageous one that could have been chosen. Providence has stationed them, like a centinel in a watch-tower, in the upper story of the fabric, to enable them to perceive objects at a greater distance.

The lids with which they are furnished, and the eye-lashes which protect them, are unitedly a defence against whatever might be hurtful to them; and, what is truly admirable, the hairs which form the eye-lashes do not cross each other like those of the head, notwithstanding they are of a precisely similar nature. During sleep, the use of our eyes would be superfluous: Nature has, therefore, ordained, that they

should be closed by the lids. But even then, the ear remains constantly open, to the end that we may be awakened by the slightest noise, whenever our security may be endangered.

But the eyes with which we view objects would have been bestowed on us in vain, if Providence had not established colour to enable us to distinguish them. Remark, my children, that all the objects in nature have a diversity of form, and different colours. Had it not been thus, what confusion and disorder would have ensued! Fortunately for us, there is an infinite variety, both in the forms of minerals, in those of plants, and in those of all descriptions of animals. This ad-

mirable variety exists likewise in colours, which are divided into thousands of gradations and shades, in-somuch, that each object may be said to have its particular livery, and that our eye has only to look around it, to recognize the one it is anxious to distinguish.

If this variety of forms and colours is indispensable to us in discerning objects, Providence has drawn from it a fertile source of pleasures and charms to the sight. It is sufficient to take a momentary view of a parterre ornamented with flowers, to perceive how much the eye of man has been favoured in this particular. Have you not, likewise, occasionally viewed with admiration the fine colours which

are depicted on the clouds, as well as the rich plumage of certain birds, as the peacock, the pheasant, the king-fisher, and a variety of others, which it would be tiresome to enumerate? Have you not remarked a thousand times the beauty of the azure of the sky, and of the verdure of the meadows. Our eyes throughout, meet with variegated colours, which seem to have been contrived to multiply our enjoyments. How much is the individual to be pitied, who is not sensible of them, and whose heart does not feel any emotion at the sight of so many wonders!

HEARING.

Mark how the spirits, watchful in the ear,
Seize undulating sounds, and catch the vocal air.

BLACKMORE.

It was necessary, my dear children, that the organ of Hearing should be placed, like that of sight, in the upper part of the human frame. Its mechanism is, perhaps, still more marvellous; and the relations which subsist between sounds and hearing do not astonish less than those which exist between light and the sight. In the first place, to the end that the ear might hear, it was necessary that there should be sonorous bodies, and that

these should be of different kinds. It was likewise necessary, that the air, instead of being an obstacle to the propagation of sounds, should be essential to their transmission.

Philosophers are as much perplexed in determining what sound is, as in determining the nature and quality of light. In what does sound consist?—By what is it produced?—How happens it, that the air, being agitated and disturbed, produces different noises? These are mysteries on which the most skilful naturalists have been merely enabled to form conjectures.

Be this as it may, our very ignorance, in this respect, affords us a fresh proof of the prodigious pains taken by the Author of Nature to

secure to us the free exercise of an organ, the advantages of which are so extensive.

Between sounds and this organ, God has established relations of utility and delight, which manifest his benevolent intentions towards us, and which ought to excite in us the deepest gratitude. He has so calculated the extent of noises and sounds, that the ear receives them most frequently with pleasure, and seldom with pain.

It might have happened, that sounds and noises should have reached the ear but feebly. It might, also, have happened, that the slightest noises and sounds should have given a violent shock to this organ. It is easy to perceive, that, in either

of these cases, the views of Providence would have been baffled. If it had been necessary that sounds and noises, to be heard, should have been very violent, our security would have been often endangered. Besides, being then forced continually to exert our voice, we should not have been able to speak without the greatest efforts; and speech, instead of being beneficial to us, would have become a real torment. If, on the other hand, the sensibility of the organ had been augmented, the ear, having become too delicate, would not have been able to bear the percussion of loud sounds, and would have been offended at the slightest noise.

The pleasures of hearing are as

multiplied as those of sight, and of the other senses. If, from the spot we now occupy on this shelving mountain, we lend an ear to the different noises which strike us, we shall hear the slight rustling of the pine which overshadows the rock in our front; the warbling of the chaffinch, which sings on the bough; the murmur of the brook which flows into the grotto; the humming of the insects which flutter on its edges; and the distant song of the woodman, who is employed in felling trees on the declivity of the mountain. The ear is on all sides struck with agreeable and varied sounds. Each bird has a particular song; each tree a different murmur; and each throat a different

voice. Even the sheep, which seem to bleat in the same manner, have such distinct bleats, that their lambs know them from among a thousand.

THE SMELL.

Next in the nostrils she doth use the smell,
 As God the breath of life in them did give;
 So makes He now this power in them to dwell,
 To judge all air whereby we breathe and live.

DAVIES.

IF the ear is charmed with the melody of birds, the varied perfume of flowers constitutes the charm of the sense of Smelling. Providence has multiplied them, not only in our gardens, but amid precipices, and in the most desolate wastes. Do you not perceive, close to us, those stems of lavender, the tops of which have so agreeable and pungent a smell? On these rocks, like-

wise, grows the rosemary shrub, the leaves of which are as aromatic as the flowers. Thyme, savory, and creeping thyme, cover uncultivated and mountainous spots; and, in the warmer regions, the furze, or broom, with its sweetly-scented flower, grows abundantly in the woods.

I do not speak here of roses, of lilachs, and of all the flowers which adorn our parterres. My sole intention is, to make you observe that Providence has lavished her bounties on us, in places even where there is not the smallest degree of culture. In the deep ravines, and along the hedges and enclosures, she has planted the woodbine, the flower of which is most delicately coloured, and sheds the finest odour. By her

care, the bind-weed blossoms beneath our steps: it grows spontaneously, and forms at our feet fragrant garlands, which we disdain for no other reason than because they are too common.

The smell, as I have already observed to you, informs us still better than the eyes, of the ripeness of the greater part of fruits. The delicious perfume exhaled by apples, peaches, pears, melons, pine-apples, plums, and a great variety of other exquisite fruits, at the time of their perfect maturity, is a notice which nature gives us, and which invites us to partake of them. It may be said, that the organ of smell is placed precisely near that of taste, to the end that we may judge bet-

ter of the aliments that are suited to us. The exhalations which are repugnant to the smell, are so many warnings which drive us, as it were by instinct, from the places where the air is corrupted, and which we could not approach with safety.

THE TASTE.

Taste after taste upheld with kindest change.

MILTON.

It may be said, that it has been the aim of Providence to vary the pleasures of the Taste, by diversifying the flavours of fruits, and of the different aliments which compose the nourishment of man. Is it not astonishing, my dear children, that the earth, which appears to be composed of the same elements, should furnish to so great a variety of fruits such different juices, all of them so delicious as to perplex the choice? —Is it not wonderful, that the roots

of the pear-tree, of the fig, the peach, and of so many other trees, should draw from the same soil a sap capable of producing fruits of so different a taste, and of so particular a shape? So long as these fruits are not proper to serve us as an aliment, they have a tart savour which offends, instead of flatters, the organ of taste; but, as soon as the point of their maturity approaches, their tartness diminishes, until at length it yields to the most exquisite flavour.

The taste, like all the other senses, is gratified at a small expense; and Providence has, in this particular, willed that the simplest aliments should be likewise the most savoury. The innumerable

fruits with which the earth is covered, provide for the taste more certain enjoyments than all the arts of confectioners and cooks; and the clear water of a spring is more agreeable to a thirsty man, than the liquors which are most in request at the tables of the rich. Remark, my children, that the organ of taste is placed immediately at the entrance of the canal by which the aliments are introduced into the stomach, to the end that a previous and definitive judgment may be formed of their good or bad quality.

THE TOUCH.

By touch the first pure qualities we learn,
 Which quicken all things, hot, cold, moist, and dry ;
 By touch, hard, soft, rough, smooth, we do discern ;
 By touch, sweet pleasure and sharp pain we try.

DAVIES.

IN the same way as Providence has appropriated colours to the sight, sounds to the hearing, perfumes to the smell, and savours to the taste, so it remained for her to appropriate forms to the Touch. It is with this view that she has rendered the ground on which we tread sufficiently hard to support us, and, nevertheless, so soft and smooth as not to wound our feet. The turf

by which the earth is covered, has not, like the branches of shrubs, woody stems. The rocks are, in several parts, covered with moss, which offers us a commodious seat, whether on the mountains, in the recesses of the woods, or in the vicinity of the brooks,

The hand is the principal organ of the touch. Observe, also, what a wonderful art Providence has displayed in its construction. The fingers of which it is composed bend, by the means of articulations, or joints, in such a way as to be able at once to lay hold of spherical bodies, angular bodies, cylindrical bodies, and, in short, bodies of every description. The unequal length of the fingers, which, at first sight,

appears to be a caprice of Nature; was necessary to be enabled to grasp round bodies; and you may, my dear children, assure yourselves of this, by taking an orange in the hand. With respect to the separation of the thumb, it is not necessary that I should point out to you its importance, and the numerous advantages which result from it. The nails are not a frivolous ornament, but serve to add to the strength of the fingers; and this kind of buckler protects that part of them which is, through its exquisite sensibility, the primary organ of the touch. However, since we are now, my children, engaged in considering the hand, let us dwell

somewhat more on this essential part of our body, and examine, with a certain degree of minuteness, the numerous services it renders us.

THE ARM AND THE HAND.

It is my wish, my dear children, to make you acquainted with a valuable instrument which you carry about you, and which renders you at all times the most signal services. I have already spoken to you of the pre-eminence of man, and of the power he exercises over the earth. Without the Arm and the Hand, this power would be in a great measure null, and void of effect. The arm, which is truly an universal instrument, has served as a model for all those contrived by man to facilitate his operations.

His arm, when extended, performs the functions of a lever, or of a bar. In bending, or contracting, by the inflections of its joints, it imitates the flail, the bow, and all kinds of springs. In clenching the hand by which it is terminated, it strikes like a mallet. The hollow of this hand being rounded, holds liquors like a cup. In bending or closing its fingers, they become hooks, pincers, and nippers. The two arms, when stretched out, imitate the balance; and, when one of them is contracted, or shortened, to support a weight, the other, by its immediate extension on the opposite side, establishes the equilibrium, and compensates, as in the Roman

balance, or steel-yard, the surplus of weight by the length of the lever.

But, to compare their services with those of ordinary instruments, is to detract from the merit of the arm and hand. In strict truth, the former of these is not only the model, but the soul, of all instruments. It is the soul of them, because the excellence of their effects constantly arises from the arm and hand which direct them. It is their model, because they are all of them either imitations or modifications of its different properties. This arm, which, being stretched out, raises a stone or a piece of wood, has suggested the idea of the lever, in laying hold of which it becomes itself

in a manner elongated. Its force may be augmented a hundred-fold or more: it then places on its side a huge block of marble. This arm, which already struck so heavy a blow, and which, in closing its hand, gave the first idea of hammers of every kind, by the help of a mallet, or of a club, is capable of felling an ox at a single blow. It hews down oaks, precipitating them from the summits of elevated mountains, and dragging them to the spot most convenient for the purpose to which they are destined, whether they be needed for domestic use, for the construction of a dam to keep out the encroachments of a river, or for any other necessary occasion,

The hand of man is capable of

transporting fire and liquors, of turning up the earth, and of laying hold of wood, stones, and all other bodies; but it performs all these acts in a minute way, frequently to a disadvantage, and at the risk of being injured or burnt. The conviction of the services it renders him, and that of the dangers to which he exposes it, have given rise to the idea of substitutes. Ladles, pincers, crow-bars, shovels, spades, pitchforks, and all other implements, are so many hands, which imitate on a large scale what the hand itself does in a smaller compass. By employing them in its stead, it secures itself from every injury.

This arm, which is not two cubits in length, with a breadth of four or

five inches, performs wonders, when it is aided by the power of tools by which it is represented, and which afford it security. It then seems to possess an irresistible force. It breaks rocks, and pierces mountains. It stays the progress of rivers, and diverts them into new channels. Iron, and all other metals, take the form it assigns to them. It overcomes the resistance of stones and marbles. It fashions them, like soft and pliant wax, into every shape, whether to construct a series of arches, which may unite the two banks of a river, or a spiral staircase, which may afford man a free access to every part of his house, or, lastly, placing them side by side, and end by end, to form,

over swamps and morasses, a road hard as iron, which, like the ancient paved way from Rome to Brindisium, may be frequented after having been trodden for a space of two thousand years.

MAN IN SOCIETY.



I HAVE now, my dear children, to show you man in another point of view. We left, at the house, your little sister Adela, whom your mama still suckles, and who passes a great portion of the day in the cradle, or in the arms of the nurse-maid. But a few years ago, you were what she now is; and I, myself, was once a child. All the human beings, who now exist, and all those who have existed, have had this beginning; and, in the same way as you were, at your birth, nurtured and taken care of by your parents, so

was I at my birth by mine. What would otherwise be the condition of an infant on his coming into the world? He is naked, and has need of clothing.—He is hungry, and is in want of nourishment.—He cannot walk, and must, therefore, be carried.—He does not speak, and his necessities must be divined.—He knows nothing, and has every thing to learn. He has, consequently, an indispensable need of his parents, and is forced to remain with them. He accustoms himself to love them. The parents become attached to him by the sentiment of benevolence; and the infant is attached to them by the sentiment of gratitude. Such is the basis, and such the origin, of human society.

It entered into the views of Providence to bring man near to his fellow-creatures; and, to attain this end, she has employed means not less admirable than those she has adopted to establish a relation between our senses and external objects. In causing man to be born ignorant and feeble, she has formed the bond of families; and, from this bond, spring our most tender affections. These domestic unions were not, however, sufficient to bestow on man the empire of the earth, and to perfect his reason to such a degree, as to lead to the invention of the arts and sciences. To form families into tribes, it was necessary to render the domestic associations dependent on each other,

and to surround the insulated assemblages by so many dangers, that its own interest should render it imperative on each, to league itself with those in its vicinity, and thus to find a security from innumerable perils. Man felt betimes that he had need of the half of his fellow creatures, to multiply a hundred-fold the powers he had received from the Author of Nature. The union of families produced an absolute change in their existence. Society was formed, and, with its aid, man subdued the elements, and seized on the empire which was destined for him. To society he is indebted for healthy and commodious habitations, the materials for constructing which, having been by

united efforts drawn from the earth, are disposed with admirable skill, and afford him a secure shelter from the rigour of the seasons. It is to society that he at once owes his victories over ferocious animals, and his conquests of domestic animals. But for a social state, he would not have been able to lay open the bowels of the earth, in search of the inexhaustible riches with which they are stored.

HUMAN INVENTIONS.

MAN, having once embraced society, proceeded from discovery to discovery. The necessity of securing himself from the inclemency of the weather suggested to him the art of building; and the want of clothing led him to invent the art of fabricating different stuffs, as well as that of spinning wool to make cloth. Agriculture sprang up; and the pastoral tribes were soon succeeded by tribes of husbandmen. In the sequel, the tribes bordering on the sea invented navigation, and

commerce was augmented in proportion as this discovery was brought to perfection.

Speech, that divine gift, which is one of the finest attributes of man, was extended, and formed a variety of languages alike rich and sonorous, in proportion as nations were multiplied. Writing soon became the pictorial representation of speech, and was brought by degrees to the perfection it has now attained.

Astronomy consulted the heavens to give useful notices to agriculture and navigation. Eclipses were predicted with a surprising exactitude, and the motions of the heavenly bodies calculated with the utmost precision. By the compass, ships were directed over the vast extent

of the seas. The progress of time was measured, and rendered sensible to the eye and to the ear by several kinds of instruments. Drawing, painting, and sculpture, represented objects with an astonishing truth. Geographers measured the earth. History preserved the remembrance of past events. Printing, in latter times, disseminated the productions of the human mind with a marvellous profusion. Fire; the use of which is known to all nations, became, in the hand of man, a formidable weapon. All the arts, and all the sciences, made a daily progress; and the works of man are, next to the works of Nature, at length, become most admirable.

VARIETIES OF LANGUAGES.



MANY Languages were anciently spoken which are not spoken at this time. The principal languages of antiquity, are the *Hebrew*, the *Greek*, and the *Latin*. They are called dead languages; but, as the books which compose the Holy Scriptures were written in *Hebrew*, and, as these books comprehend what we hold to be most sacred, the history and foundations of our religion, the knowledge of that lan-

guage has been most scrupulously preserved. On the other hand, the fine productions of literature and history, which were written in *Greek* and *Latin*, have perpetuated, among well-informed persons, the use of these two languages; and, those who study and understand them, have the advantage of reading, in the original, the finest poets and best historians of antiquity, at the same time that they acquire a better knowledge of their own language, many words belonging to the ancient languages having been introduced into all the European tongues.

The principal languages now spoken in Europe are, the English,

French, German, Russian, Italian, and Spanish. Of these, the English and French are the most generally cultivated.

VARIETIES of the HUMAN RACE.



Do you observe, my dear children, the ship which appears in the distance like a black spot on the surface of the sea? It has just performed a voyage round the globe, during the progress of which it has seen many countries and many nations. Man, who is of all animals, one of the best constituted, as he is capable of enduring all climates, is, notwithstanding, influenced to such a degree by the elements, and by climate itself, that he is found

to be more or less white, more or less black, more or less tall, and more or less robust, according to the countries he inhabits.

The finest men are met with in Asia, in the environs of Mount Caucasus, in Circassia, and in Mingrelia. In those countries, the white race may be considered as having originated, and it has thence spread into every part of Europe, as well as into a portion of Asia, with the exception of the northern extremities of the two quarters of the globe. The white race also occupies all the northern part of Africa, Egypt, Barbary, and the empire of Morocco; with this difference, however, that the inhabitants are somewhat more tanned in the countries

where the heat of the sun is most powerful. This is so natural, that even in France, which enjoys a mild climate, the inhabitants of the southern provinces are more tanned than those of the northern provinces. The white race is the one which has attained the highest degree of perfection, and which has produced the most celebrated nations, both of antiquity and of modern times.

Next to the white race, the one which is the most remarkable, and the most industrious, is the yellow or Mongola race, which extends from the Indus to the eastern extremities of Asia, comprehending Japan and the neighbouring islands. The *Chinese* belong to this race:

they have brought to great perfection the industrious arts, as is evinced by the great celebrity of their manufactures of paper, silks, and porcelain.

In the western, eastern, and southern, parts of Africa, are to be found entire and numerous tribes, whose skin is of a shining black, and the hair woolly: these we call *negroes*, or *blacks*. The Hottentots and Caffres are a few shades lighter, and have the countenance triangularly shaped.

The Aborigines, or primitive inhabitants, of America, are of a copper-colour, and appear to have a great affinity to the Asiatics, who were the first to people that vast

continent, to which they penetrated by the Aleutian islands.

At the northern extremity of Asia, lies the peninsula of Malacca, where is to be found a race of large and powerful men, who appear to have anciently peopled the different islands of the Pacific Ocean. In these islands, discovered by Cook and Bougainville, the men are as fine and as robust as the Malays; and the language of the islanders has the greatest affinity to that of the inhabitants of the peninsula of Malacca.

Finally, the last race, and the most miserable of all, is that which inhabits the extremity of the northern countries, as the Laplanders,

the Samoieds, and the Kamtschatkans. These nations are very short of stature: they are stunted, like the vegetables which grow in these frozen regions.

THE HISTORY OF THE
CITY OF BOSTON
FROM 1630 TO 1800
BY JOHN H. COLEMAN



Printed by J. W. Loring, Boston.



Summary Description of the Earth.

ABRIDGED DESCRIPTION OF THE EARTH.

Graceful with hills and dales and leafy woods.

THOMSON.

ALTHOUGH the influence of climates, of nourishment, and of habits, changes, more or less, the colour of men, and modifies, in a greater or less degree, their organization, it suffices to take a cursory view of the rudest and most barbarous tribes, to be satisfied that they still present a physical and moral perfection which places them in-

finitely above animals, and that any approximation between the least enlightened savage and the most industrious animal, would be the height of folly, if it were not to argue the utmost insincerity. Man is essentially every where the same. He has every where the use of speech, and submits language to rules which attest the profundity of his conceptions. Every where man invents and perfects.—Every where he subdues animals, tills the ground, adventures on the surface of the ocean, measures time, and obtains a dominion over fire.—Lastly, by the aspect of the wonders of Nature, he every where soars to the contemplation of a God, the crea-

tor and preserver of all things, and to that of a life to come.

I shall now, my dear children, transport your imagination to the different parts of the world, of which we will take a rapid view. We occupy a point only of this immense globe, which has a circumference of nine thousand leagues; but, from the spot at which we are stationed, our intellectual regards may embrace the whole of its circuit. Aided by the relations of travellers, we may ourselves travel in a manner without shifting our place. However, as the tour in which we are about to engage must necessarily occupy but a small space of time, I should hope that the slight sketch

I am about to give you, will stimulate you to enter ardently on the study of geography, which will afford you a detailed knowledge of the different regions occupied by the human race.

EUROPE.

What cannot art and industry perform
 When science plans the progress of their toil?
 They smile at penury, disease, and storm,
 And oceans from their mighty bounds recoil.

BEATTIE.

THE part of the world which we inhabit is Europe. It is the least extensive, but it is the one in which the most flourishing nations are found; the one which has attained the highest degree of civilization; and the one in which the arts and sciences are most cultivated, and have given birth to the greatest number of masterly productions. All the nations

of this quarter of the globe belong to the white race, and, as I have before observed to you, have acquired the greatest perfection. Its most northern part alone is occupied by nations less vigorous, and less delicate in their structure.

The length of Europe is estimated at eleven hundred leagues, and its breadth at nine hundred. Its principal states are, *England, France, Germany, Austria, Russia, Prussia, Sweden, Denmark, Norway, Poland, Hungary, Holland, Switzerland, Spain, Portugal, Italy, and Turkey in Europe.*

Of these kingdoms it may generally be said, that they produce abundantly whatever satisfies the wants, and contributes to the com-

forts and enjoyments of man. By his industry, and by the aid of commerce, they are stored, not only with their own natural productions, but with those of every quarter of the globe; and, where the climate does not suffice, nature is forced, to spread the table with the richest delicacies of foreign climes.

The country which has given you birth, is the one which ought to engage your chief attention. I shall provide you with a map, in which you will see its divisions into shires and counties, its principal rivers and mountains, and the cities most deserving of your notice. With the splendour of the capital; its population and riches; with the opulence of the chief cities and towns; and

the unrivalled manufactures of several of them, you will hereafter be made fully acquainted.

A map of Europe will, in the same way, bring to your view the position of its principal states, and will point out to you the divisions and chief cities.

ASIA.



Asia, o'er thee shall History glance the eye
 For sculptor'd glories, symmetry, and grace,
 Time's matchless finger shall that glance defy,
 The touch of ages every tint efface.



ASIA, which was at once the birth-place of mankind, and of the sciences, is about seventeen hundred leagues in length, and fifteen hundred in breadth. Great empires, the remembrance alone of which has been handed down to us, formerly existed there. Babylon, Ec-batana, and many other celebrated cities, have disappeared, and have left not a solitary trace behind.

The principal nations of modern

Asia, are the *Turks*, the *Arabs*, the *Persians*, the *Hindous*, the *Moguls*, and the *Chinese*.

Arabia forms the greatest peninsula in the world. It is estimated to have an extent of five hundred leagues from north to south, and of four hundred from east to west. Its principal cities are *Mecca* and *Medina*. To Arabia, Europe is indebted for the coffee-berry, the plant bearing which has been carried to the West-Indies, where it thrives as well as in its native soil.

China is the finest and most powerful of the Asiatic states. The Chinese cultivate the arts very successfully. They, as well as the Japanese, manufacture a kind of porcelain which is held in great esteem, and which was, for a long time, su-

perior to that which is manufactured in England, in France, and at Dresden, the capital of Saxony. Their paper and silks are, likewise, much esteemed; but, it is deserving of remark, that this nation is still unacquainted with alphabetical writing. The writing they employ, and which is very difficult to comprehend, is a series of hieroglyphics, the knowledge of which is confined to men of letters.

Asia, being very extensive, has not throughout the same climate, nor, consequently, the same race of men. The southern parts are subject to extreme heats; while those lying towards the north, have to endure a frost which lasts three-fourths of the year.

AFRICA.

Regions immense, unsearchable, unknown,
Bask in the splendour of the solar zone.

MONTGOMERY.

AFRICA, the borders alone of which are known to us, is a great peninsula. It is united to Asia by a slip of land about twenty leagues in breadth, which separates the Red Sea from the Mediterranean, and which is known by the name of the *Isthmus of Suez*. Its greatest length is one thousand five hundred leagues, from north to south; and its breadth twelve hundred, from east to west.

Egypt is the country the most celebrated in this part of the globe, and one of those which boast the highest antiquity. Europe was still plunged in the profoundest state of barbarism, when the Egyptians enjoyed all the advantages of civilization. The *Magi*, from whom we have derived our term *magician*, were very learned; and, it was from Egypt that the sciences found their way into Greece, whence, in the sequel, they penetrated into Italy. At the present time, the Egyptians may be reckoned among the most abject of nations. Grand Cairo is the largest city of Egypt: in its environs, and on the bank of the Nile, are those famous pyramids

which are comprehended in the number of the wonders of the world. They are so ancient, that the time when they were built is not known.

AMERICA.

Extensive lakes, huge foaming cataracts roar,
Deep mighty waters gird the craggy shore ;
Commerce and Industry's energetic form
These wilds shall cultivate, these plains adorn.

THIS part of the globe, for the discovery of which, not until towards the close of the fifteenth century, we are indebted to Christopher Columbus, is of itself nearly as large as Europe, Asia, and Africa ; but is far from being so populous as it might have been, on this account, that the primitive inhabitants, being collected in small tribes, are dispersed over, or may rather be said

to be lost in a vast extent of territory.

This immense continent, which is naturally divided into two parts, North America and South America, yields an infinite quantity of metals and minerals of every description. The gold which the Europeans have from it is incalculable.

Christopher Columbus, by whom, as has already been observed, the American continent was discovered, had not the glorious distinction to give it a name. A Florentine adventurer, who landed there five years after him, obtained this honour, which he did not deserve. This adventurer having published, under his own name, that of Americus Vesputius, the relation of his

voyage, it became the custom to bestow the name of America on the newly-discovered world.

Canada, an immense country divided into two provinces, and *Nova Scotia*, both belonging to the English, are situated in North America; together with the *United States*, formerly English colonies, which shook off the yoke of Great Britain, and declared themselves independent, in 1776. They now form a confederated Republic, composed of seventeen states.

South America contains Guiana, the country of the Amazons, Brasil, and Peru, the latter of which territories has acquired great celebrity by its gold and silver mines. Brasil is equally celebrated for its diamonds.

CLOUDS AND RAIN.

These to the raptured mind aloud proclaim
 Their mighty shepherd's everlasting name.

BLOOMFIELD.

EDWARD and Maximilian listened to Montval with an attention truly beyond their years. So powerfully did fancy operate on them, that they followed him ideally into the different regions of the earth ; and the distant view of the sea appeared to bring nearer to them those foreign shores, with the description of which they had been so highly delighted.

But while they still enjoyed the cool and agreeable shade of the

grotto, listening with eagerness to the discourse and instructions of their father, clouds suddenly formed in the sky; the heat of the sun's rays was sensibly augmented; and every thing seemed to indicate an approaching storm. Fortunately, however, the clouds were dispersed by a north-west wind; a few distant claps of thunder were heard; a slight dew moistened the earth; and the rainbow shone amid the fleeting clouds. Edward and Maximilian were quite charmed with this spectacle, and were desirous to know in what manner clouds are formed in the sky. Montval endeavoured to satisfy their curiosity, by imparting to them the following particulars. A cloud, he observed to them,

is similar to the fogs, which, as you must have noticed, are formed in the evening over the banks of rivers, and over marshy grounds. There is this difference, however, that the cloud is elevated in the air, and is driven by the winds until the moment when it falls on the earth in the form of rain.

The sun, by its heat, draws or sucks up the water from the earth, and causes it to ascend to the sky in invisible vapours. The seas, rivers, lakes, and pools, supply incessantly, but in a still greater proportion in summer than in winter, these vapours, which, being collected, form clouds in the sky. The latter remain suspended there, and produce a variety of meteors. In the

formation of these meteors, one of the principal agents is the cold which prevails almost constantly in the upper region of the air.

When this cold approaches nearer to the earth, it throws down the vapours in the form of *dew*. If they descend in a greater proportion, they are condensed into the form of *mist*. If these vapours, becoming very abundant, are of an equal weight with the air, in its lower region, they become visible, and, rising to a small distance above the surface of the earth, form a *fog*. Being somewhat lighter, and rising somewhat higher, although not to a very considerable elevation, if they do not meet with a sufficient degree of cold to condense them, or with

as much wind as is capable of dispersing them, the weather becomes dull, close, and overcast, and continues in that state for several days, without rain and without sunshine. But, when the cold of the upper region of the air approaches nearer to the earth, and condenses the vapours, they separate, and leave a passage for the rays of the sun, until at length, by a still more powerful condensation, they fall in drops, and cause *rain*. If the cold be sufficiently great to freeze the drops, either in the clouds, or during their descent, the rain is converted into *hail*, or into *snow*.

THE WINDS.

To him, ye vocal gales,
 Breathe soft, whose spirit in your freshness breathes;
 Oh, talk of him in solitary glooms!
 Where o'er the rock, the scarcely waving pine
 Fills the brown shade with a religious awe;
 And ye whose bolder note is heard afar,
 Who shake the astonish'd world, lift high to Heaven
 The impetuous song, and say from whom you rage.

THOMSON.

Do you not perceive, my dear children, how much cooler the breeze has become since the storm? It seems to have given new life to the plants, and to have revived all nature.

You know that there are four principal or cardinal Winds, namely,

those of the north, south, east—or orient, and west or—occident. The north wind is the coldest, because it comes from the frozen regions, or glacial zone. In the same way, the south wind is the hottest, because it proceeds from the direction of the torrid zone.

That the winds are a blessing of Providence, is demonstrated, among other things, by the great advantages they afford to mankind. The agitations they cause in the atmosphere are so useful, and even of such absolute and indispensable utility, that, without them, the whole earth would be, in a short space of time, infected, and in a manner poisoned. These movements of the air contribute, likewise, to the en-

joyments and pleasures of life, as, without them, man would be in a great measure incapable of performing his useful labours; and, but for the gentle breezes which constantly prevail beneath the Torrid Zone, he would be incapable of existing there. How many observations might not be made respecting the utility of the winds, in their application to a great variety of machines, employed both in civil life, and in the commerce carried on with distant nations.

THE SEA.

And thou, majestic main,
A secret world of wonders in thyself
Sound his stupendous praise, whose greater voice
Or bids you roar, or bids your roaring fall.

THOMSON.

THE earth would have been but ill-calculated for the life of animals, and for the health of man, if the waters which surround it on every side had been corrupted. The flux and reflux, the constant agitation of the waves, and the saltness of the Sea, are the great means Providence has employed to maintain the purity of its waters. The perpetual counter-

poise which forces them to find their level, prevents them from stagnating and corrupting, as would happen if they were to remain constantly in the same place; independently of which, this agitation of the waters tends to disperse in the sea the salt with which it is filled, and which, but for this help, would speedily sink to the bottom. If the water which flows on our coasts were to lose its saltness, it would contract an insupportable stench, by which we should be infected, and would cease to afford a nourishment to the fishes, the delicacy and abundance of which alike claim our admiration.

The saltness of sea-water renders it unfit to drink, in which respect it

differs from the water of springs and rivers. It possesses so strong a bitter, and sharpness of taste, that it excites violent nausea. From this water, our common or culinary salt is extracted: for this purpose, the salt-water is conveyed into large pits, or, as they are usually called, salt-pans, having a depth of not more than a few inches. The sun evaporates the water, and the salt is found dry at the bottom of the pit.

RIVERS.



Nor is the stream
Of purest crystal, nor the lucid air,
Though one transparent vacancy it seems,
Void of their unseen people.



IF we derive great advantages from the sea, how many do we not reap from the current of Rivers which flow into it, and from the tranquil course of brooks, by which these rivers are formed! We will not enquire, at present, where the reservoirs which supply them are placed, but will be satisfied with admiring the abundance and depth of these

currents, which were so feeble in their origin, together with their passage through whole states and provinces, the duration of their progress over an extent of several hundreds of leagues, and their astonishing breadth, which frequently converts them into seas before they reach their mouths. Such is the Rhine, which passes from Switzerland into France, Germany, and Holland, where its vast bed is divided into four or five channels, and which flows into the sea after a course of two hundred leagues. The Danube runs over a space of five hundred leagues before it falls into the Black Sea. The Niger distributes its waters over more than twelve hundred leagues of

the burning deserts of Africa; and the river of the Amazons, which is merely a brook near Quito, where it originates, after a course of eight hundred leagues, according to some travellers, and of twelve hundred according to others, flows into the ocean by a mouth which has a breadth of eighty-four leagues.

It might be thought, that rivers, particularly when they are rendered more capacious by the tribute of several streams, would repair in a direct line to the place where they discharge themselves: they, however, make long circuits in the territories through which they pass, as if with a view to water a greater extent of ground.

SUNSET.



The Sun too now seems to have finish'd his race,
And sinks once again to his rest;
And, tho' we no longer can see his bright face,
He leaves a gold streak in the West.



THE Sun was now about to terminate his course, and the whole of the western horizon glowed with colours which vied with those of the morning's dawn. The vapours were there fringed with gold and purple, while, in quick succession, tints still more brilliant than the first struck the eyes of Montval and his sons. Such a spectacle could not

be viewed by Edward and Maximilian without surprise and admiration. My children, said their father, what you now regard is, in reality, magnificent, but what bestows on it a new interest is, that it is varied every day,—and he who should undertake to paint or describe it, would constantly have to employ new colours, new gradations of tints, and new forms.

I could not, my dear children, have taken a better opportunity than the present one, to point out to you the azure colour which adorns the vault of heaven, and to remark how soothing and agreeable it is to the sight. In adopting it, Providence, without doubt, foresaw that it would be the one best calcu-

lated to please the eye. But of what is this fine azure vault composed? We know that this magnificent work is altogether the effect of the admirable combination of air and water. Without the atmosphere the azure hue of the firmament would not exist, and we should be in a great measure deprived of the benefit of the light. You will learn hereafter that the great body of floating vapours by which we are surrounded, is simple and uniform throughout its whole extent, and its colours are every where the same. The pale blue is natural to water, whether it be condensed or rarefied, more particularly when its bulk is great. The atmosphere must, therefore, necessarily be of an azure colour,

and this azure must either be lighter, in proportion to the quantity of rays by which it is penetrated, and which are reflected in it, or of a deeper hue, when the absence of twilight obscures the blue of the atmosphere by the black which immediately follows.

RETURN HOME.

THE FAMILY SUPPER.

THE sun was no sooner set than Montval and his children quitted the summit of the mountain on which they had spent the day, and which had served them as an observatory whilst contemplating the universe. They took the road which led to their dwelling, highly satisfied with the mode in which they had passed their time, and felt disposed occasionally to devote a day to similar contemplations.

On returning to the house, they found the frugal supper, which Madam Montval had prepared for them, placed on a table fronting a window which looked into the garden, and the blinds of which were open. The flower-beds exhaled a delicious perfume; the nightingale, inspired by the coolness of the air, warbled melodiously; and the planet Venus, which is commonly called *the Evening Star*, had already risen, and shone resplendent in the heavens.

Edward and Maximilian related to their mother all the particulars of their walk on the mountain, and expressed a wish, that this charming day might be completed as it had been begun, by their taking

a walk in the garden after supper. To this, Montval consented ; and their happiness was crowned by his promise to accompany them. They supped with all diligence ; and, observing that the sky was covered with stars, they pointed it out to their father, as if to bring to his recollection the engagement he had made with them.



The Stars.

THE EVENING PROMENADE.

THE STARS.

The beauty of Heaven, the glory of the Stars.

SON OF SIRACH.

I PROMISED, my dear children, to accompany you to the garden after supper. It is now my wish to draw your attention once more to the innumerable stars which shine in the firmament. You cannot fail to remark, that the aspect of the sky is not the same as it was this morning

before day-break. This is because several of the stars which then shone are now beneath the horizon. They will rise in the course of the night, and will appear at stated intervals. Look toward the north; for, in that part of the sky, the stars of the *Great Bear* shine with an uncommon splendour. In following the line of the three stars which form the tail of the Bear, you come to *Arcturus*, a remarkable star, belonging to the constellation of *Boötes*, and which, twinkling, shines like a diamond, and strikes the eye with all the colours of the rainbow. In directing your attention to the *milky way*, you may distinguish the *Swan*, which forms a large crop; *Cassiopea*, or the *Lady in her Chair*, which is

like an *m*, but with a greater extension at the inferior part; and, lower down, the *Bull*, which, to employ the expression of Virgil, presents his golden horns. By degrees, I will teach you to know the different constellations.

You will agree with me, my dear children, that this spectacle of the starry heavens is as astonishing as it is magnificent. Do not imagine, however, that it is an idle decoration. Among the stars which man can readily distinguish, he has a knowledge of several which are always above him, and are constantly stationed in the same part of the sky. He sees others which describe large circles, which rise by degrees above the horizon, and which dis-

appear by sinking beneath the extremities of the earth, by which his view is bounded. The former regulate his voyages and travels, by showing him, amid the obscurity, a side of the sky the aspect of which never changes, and which suffices to prevent him from losing his way. As the clouds, and the thickness of the atmosphere, however, deprive man, from time to time, of the sight of the stars which were destined to be his guides, God has established such a relation between that part of the sky, and iron which has been touched by the loadstone, that, if iron is suspended so as to be nicely equipoised, it constantly turns, and, moved in any direction, it always points, towards the North Pole. In

this way the traveller is informed of the station of those guides he can no longer see, and his course never ceases to be regulated, however the sky may be obscured.

The other stars vary their aspects. Although they constantly preserve the same situation among themselves, they change from day to day, with reference to us, the order of their rising and setting. These very changes serve, by their regularity, to adjust our labours, and determine with greater precision the return and completion of the seasons. The sensations of heat and cold would have been too uncertain to become a rule for seed-time and for the cultivation of the land; neither would they have pointed out the fit sea-

sons for navigation. Man, when he observes the sun place himself in the train of the different stars, and uniformly complete his course from year to year, finds all the necessary instructions in these respects. He thus knows the course of these planets; he gives a name to each of them as they pass on their route; he knows the precise time required for each to perform its course; and thus he becomes acquainted with the abodes of the moon and planets, the limits of their orbs, and all the economy of the year and months. He represents them on a small scale by machines, which are made to revolve with great precision and regularity. He makes observations, from one extremity of the sky to the other, of different points, diffe-

rent lines, and certain figures and marks, which direct him in his operations. He thus becomes acquainted with every part of the heavens, a map of which he draws out, and in which he may be said to travel. All the objects, however, of so much utility, which he there distinguishes, are effaced at the approach of the sun; and, if he knows distinctly the particular stars, the sight of which is lost successively in his rays, it is through the knowledge he has of their distance as it refers to those which the night discloses to him.

It is, therefore, the night which, by affording him a new spectacle, supplies him with the most secure means of regulating his labours, and the order of society.

THE MOON.

By Thy command, the Moon, as daylight fades,
 Lifts her broad circle in the deep'ning shades ;
 Arrayed in glory, and enthroned in light,
 She breaks the solemn terrors of the night.
 Sweetly inconstant in her varying flame,
 She changes still, another, yet the same!
 Now in decrease, by slow degrees she shrouds
 Her fading lustre in a veil of clouds ;
 Now of encrease her gathering beams display
 A blaze of light, and give a paler day.

BROOME.

OH! papa! (exclaimed Montval's children, interrupting him,) do you see the flame which appears in the east? Is it a fire which has just broken out?—Be under no concern, my dear children, it is nothing more than the rising of the moon. We shall soon see her ascend above the horizon, and assume her pallid hue.

The garden will then be illumined by her soft and chastened light; and the planets, and stars of the first magnitude, will be the only ones we shall perceive in the heavens.

The place of the moon's rising is daily retrograded from west to east. She sometimes puts on an ash-colour garb, edged nearly throughout with a simple thread of gold;—at others she assumes a purple dress, and, at this time, she ascends above the horizon with an apparent size much larger than is customary. She afterwards, in rising, diminishes and grows pale. In proportion as the day-light vanishes she becomes more resplendent, and of greater utility; but, whether she shows herself in part only, or

displays herself entirely, she throughout bestows on Nature new ornaments; sometimes by alternately bursting out from the clouds and hiding herself within them; sometimes by darting her rays through the thick foliage; at others, by adorning herself with a crown of different colours, which she borrows from the clouds; or, lastly, by attracting a general notice, when the earth, placed between the sun and the moon, throws her shadow on the latter, and either obscures her to a certain degree, or darkens her entirely.

Let us, my dear children, dwell for a short time on the advantages which the moon, in her progress, affords us. This body, ponderous

as it is, has been placed, relatively to the earth, in a point, and in an orbit, so little distant, that she casts on us more light than all the stars taken collectively. Should man find it necessary to set out on a journey before day-break, or to continue his route after the sun is set? The first quarter of the moon serves him as a guide immediately after the planet of day has withdrawn his light; and, in the same way, the last quarter tenders its service to him several hours before the morning's dawn; and the full moon may be said to afford him days of twenty-four hours, by lighting him uninterruptedly. The moon is not only destined to cheer the dull solemnity of night, by a light which

lengthens out that of the sun, which it succeeds as a substitute, but is a true satellite attached to the palace of man. Being thus stationed, it is her office to occupy successively different posts, and to give him at each of them a new notice and a new signal. The sun was appointed to regulate the order of rural labours, by the revolution of a year ; but the moon, by making around us a similar revolution in twenty-nine days, and regularly changing her figure at each of the four quarters of her course, was intended to regulate the civil order and customary affairs of society. She presents to all nations a watch-light, or beacon, which takes an entirely new form every seventh day, affording them com-

modious divisions, of regular and short durations, calculated to determine the commencement and end of each detailed operation. Thus, the Hebrews, Greeks, and Romans, and in general all the ancients, assembled on the appearance of the new moon, to pay their pious debts of gratitude for this blessing conferred on them. On that day, whatever could interest them during the space of the new month was announced to them. The full moon brought them together at the half of this space ; and the intermediate quarters were two other terms easily pointed out to them.

Even at this time the Turks, Arabs, Moors, several of the American tribes, and many other nations, adjust their calendar by the new

moon, and the different *phases* or changes of this planet. If we pay less attention to them, it is not because she does not invariably render us the same services, but because we are exempted from all such trouble and inspection by the convenient calculations with which skilful astronomers have supplied us. Their calendars, however, which are our guides on every occasion, are regulated by the observation of the course of the moon, and are adjusted beforehand by the notices which this vigilant satellite will never fail to give, until He, who has for our sake placed her as a centinel, shall think proper to change her functions, by changing the condition of man, to whose service he has attached her.

NIGHT.—SLEEP.



Sleep steals away
 The wild desires of Men and toils of day,
 And brings, descending through the silent air,
 A sweet forgetfulness of human care.

POPE.



OUR day's occupation, my dear children, is at length concluded. Night now covers the universe with her veil, and invites us to repose by her silence and by the profound tranquillity she sheds over the earth. If we have prolonged our meditations beyond the hour when we are accustomed to betake ourselves to rest, it has been with no other view than to terminate what I had to say

to you relative to the wonders of nature. The placid serenity which accompanies darkness; the refreshing coolness which is diffused in the atmosphere; and the mysterious silence which seems to protect the repose of man, are likewise blessings of Providence.

Yes, my children, night, in depriving us of the sight and enjoyment of nature, appears to have done so, expressly to lull our senses, and procure us an agreeable slumber. Providence acts like a tender mother, who, having placed her infant in the cradle, shuts out the strong light, hushes every noise, and watches with complacency to secure its repose.

Night and sleep are so intimately allied, and the former so well calculated to bring about the latter, that when we have need of repose, we have recourse to what may be called an artificial night. We seek solitude and the shade; and we employ curtains and blinds.

But night, in rendering herself useful to man, does not subject him to a precise moment. She does not come, with hasty steps, to extinguish the torch of day, and deprive us suddenly of the sight of the objects which engage our attention. Far from surprising us in the midst of our occupations, or of our travels, she advances slowly, and does not quicken her pace, or darken the

shadow she spreads over the earth, only by degrees. She allows us to complete what we are anxious to finish; and it is not until she has warned us of the necessity of taking repose, that she finally obscures nature.

THE END.

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